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ANTIMICROBIAL ACTIVITY OF A NOVEL PERACETIC ACID DISINFECTANTS OF BIOXY H ON RESISTANT PATHOGENS

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Purpose: The disinfection of the resistant pathogens in environment is critical in manipulation of infection control. The usually used disinfectant as chlorine may produce toxic by-products. The purpose of this study was to determine the antimicrobial activity of a novel PAA disinfectant (Bioxy H) on several resistant pathogens. It is a modified PAA, is less erosive damage and toxicity than traditional PAA but reserve the effective antibactericidal effect.
Methods: We add the powder on sterile water to obtain the Bioxy H 5.0% (W/V) solution. The resistant microorganisms were cultured twice and obtain the broth suspension of 0.5 McFarland. This was accomplished by performing a standard kill-time suspension test using a 2 minutes contact time. Negative and positive controls were performed.
Results: The tested bacteria and Candida albicans were killed to zero in 2 minutes contact time.

Table Antimimicrobial activity of PAA in resistant pathogens.

Test organisms	Contact time	Log reduction
Vancomycin-resistant *Enterococcus*	2 minutes	8 LOG
Methicillin-resistant *S.aureus*	2 minutes	8 LOG
Carbapenem-resistant *E.coli*	2 minutes	8 LOG
Carbapenem-resistant *K. pneumonia*	2 minutes	8 LOG
Carbapenem-resistant *A.baumannii*	2 minutes	8 LOG
Carbepenem-resistant *P.aeruginosa*	2 minutes	8 LOG
Shigella sp.	2 minutes	8 LOG
Salmonella sp.	2 minutes	8 LOG
Candida albicans	2 minutes	8 LOG

Conclusions: The PAA Bioxy H solution was able to completely inactivate the common resistant pathogens of health-care infection after 2 minutes of contact time.

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OLD PROBLEMS, NEW STRATEGIES DISCUSS SUCCESS OF COUNTERMEASURE MANAGEMENT ON SHARPS INJURIES AND EXPOSURE TO BODY FLUIDS

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1. Purpose: Based on issues concerning with employees suffering from infection through needle sharps injury events as well as exposure to body fluid and blood analysis. Protective measures derived from improvement project have been proposed to reduce and prevent occurrence of sharp injuries and injuries due to exposure to body fluids.
2. Methods: Ad hoc methods are used to analyze the cause of sharp injuries. Development of education and training programs with the aid of introduce safety needle equipment as improvement measurements. PDCA management processes are implemented for continuous improvement strategies
3. Results: A) After launch these improvement policies, hospital staff sharp injury and exposure to body fluids incidents rate have declined from 0.38 % to 0.27%.
B). Port A needle stab injuries have diminished from 4.5 % to 0 %.
C) After implementation of these improvement policies, compared to year 101, there were 13 fewer incidents associated with sharp injuries and exposure to body fluids in year 102. In addition it is estimated to reduce $134,472 NT dollars in expenditure.
D). Employee safety is intricate to estimate in the context of intangible benefits.
4. Conclusion: By launching appropriate training programs and by the introduction of safety needle equipment, it can effectively decrease the incidence of needle stab injuries and exposure to body fluids.

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OUR INFECTION CONTROL ACTIVITIES IN FUKUOKA DISTRICT IN JAPAN

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Purpose: Infection control activities had been performed in a single hospital to prevent nosocomial infection. Infectious diseases usually spread borderlessly, and nowadays drug resistant bacteria have become popular even in the community. And we always have the risk to face against emerging infectious diseases. From this point of view, hospitals in the district should make concerted and united efforts against infection control.
In Japan, small group network formation has been required by the government from 2012. Besides this network, we developed further network formation consisting of 80 hospitals and aimed to progress in infection control.
Methods: Our department (Center for the study of global infection) was established on Nov 2011, and started several infection control activities. In managing infectious diseases, proper measures in infection control and appropriate judgment in diagnosis and treatment are two big pillars. As to infection control, quality improvements in consciousness of preventing infection and in skills of healthcare workers are important. First we continued having conferences on infection control affairs. Secondly, we have started three programs for cultivation of human resources.
Results: Fukuoka city is located in the north of Kyushu Island in Japan, which has 1.5 million people. About 80 hospitals have joined the Fukuoka ICT network and hold periodic conferences twice a year and discuss about infection control affairs each other. From the questionnaire, we could confirm the improvement of consciousness against infection control. Three programs consist of the first program for improvement of nurses' skills, the second program for antimicrobial stewardship for physicians and pharmacists and the third program for the proper performance of microbiological examination for physicians and microbiological technologists. Through these conferences, we could qualify the improvement of healthcare workers in infection control.
Conclusions: The importance of network formation and improvement in consciousness and skills in all health care workers are recognized important once again.

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ANTIMICROBIAL SUSCEPTIBILITY OF RESPIRATORY INFECTION AMONG HOSPITALIZED PATIENTS FROM LONG-TERM CARE FACILITIES IN SOUTHERN TAIWAN

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Purpose: Pneumonia is one of the most common problems leading to hospitalization among residents of long-term care facilities (LTCFs). Multiple drug resistant (MDR) organisms had been considered as important pathogens and current treatment guideline recommended broad-spectrum antimicrobial therapy. The aim of this study was to investigate the pathogens and the resistant pattern in LTCF pneumonia.
Methods: Patients from LTCFs who was admitted due to respiratory tract infection were included for sputum isolation and antibiotic susceptibility test. Only gram-negative organisms were analyzed.
Results: A total of 117 patients with 142 sputum isolates was included between January and December 2013. Among these patients, 75% were males and the mean age was 76 $\pm$ 12 years (range, 22-97 years). Most patients (82.1%) used nasogastric tubes and 18.8% had tracheostomy. Three(3/16, 19%) isolates of *E. coli* and seven (7/32, 22%) of *K. pneumoniae* were ESBL producers, of which levofloxacin susceptibility was 10% (1/10), cefepime by susceptible dose dependent was 30%(3/10) and no resistance to carbapenem.